



## PIMA COUNTY LOCAL DROUGHT IMPACT GROUP

Wednesday, November 14, 2012

2:30 p.m.

Public Works Building  
201 N Stone Avenue  
3<sup>rd</sup> Floor Conference Room  
Tucson AZ 85701

### AGENDA

Attendance:	Karen Wilson	RWRD	Mead Mier	PAG
	Lillian von Rago	RWRD	Erin Boyle	NOAA
	Mitch Basefsky	CAP		
Speakers:	Dr. Nancy Selover	State Climatologist, ASU		
	Kathy Chavez	Water Policy Manager, RWRD		

1. Welcome & Introduction – Introductions were made
2. Updates
  - Drought Status Map
    - Short Term – October was dry across most of Arizona but that is not unusual for October
      - NE Arizona on the Navajo Nation still has a large area of extreme drought (D3)
      - No change in drought status except along the Colorado River valley in northwestern Mohave County – it improved from moderate to abnormally dry due to a significant precipitation event in the Las Vegas area
    - Long Term – Summer monsoon was wetter than the last three seasons for many parts of the state –one category improvement seen in five watersheds
      - Southeast corner of Arizona deteriorated from severe drought (D2) to extreme drought (D3)
      - The remaining eight watersheds did not change in their current drought status
      - Another dry winter will seriously degrade the situation and more groundwater pumping will further deplete the aquifers
      - Winter is forecasted to be either a weak El Niño or neutral – no strong indication for wetter or dryer weather this winter
  - State Drought Monitoring Technical Committee – October 30, 2012
    - The MTC consists of members from National agencies (Climate Prediction Center, Weather Service/NOAA, etc.), state agencies (State Climatologist Office, U of A,

- Salt River Project, etc.), native representatives and Local Drought Impact Groups (Pima County's LDIG), for example
- Discussed drought status, recent precipitation or lack of it, ground observations and, through discussion and agreement, set the long-term drought status for the state
- Drought Interagency Coordinating Group – November 6, 2012
  - The Governor's Drought Interagency Coordinating Group meets twice a year to discuss drought observations and impacts. Members include representatives from ADWR, ASU's State Climatology Office, Salt River Project, University of Arizona's Institute of the Environment, Dept. of Emergency & Military Affairs, State Forestry Division, AZ Game & Fish, State Range Conservationist, Tribal representatives and Local Drought Impact Groups
  - Presentations and discussions regarding real-time drought impacts, observed and predicted weather, drought-related disaster declarations, etc.
  - Assembled professionals decide on recommendation to report to the Governor regarding drought
- 2012 ADWR Arizona Drought Preparedness Annual Report
  - Report forwarded to the Governor concerning state of the drought and implications to the state – information from Pima County's LDIG included
- 3. Climatology 101 – Nancy Selover, State Climatologist
  - Arizona's weather is influenced by a number of factors including, but not limited to, atmospheric circulation (winds/jet stream), ocean circulation (ENSO = El Niño/La Niña) and moisture sources. The circulation patterns that affect AZ usually begin in the Northwest/Alaska region
  - Other patterns that affect Arizona's weather include
    - Pacific Decadal Oscillation (PDO)
    - Atlantic Multidecadal Oscillation (AMO)
    - Atlantic and Eastern Pacific sea surface temperatures – control teleconnections Like El Niño
    - Polar Jet Stream
    - Bermuda High
  - In the Northern Hemisphere, the ocean circulation is clockwise – the California current is very cold
  - In the Southern Hemisphere, the ocean circulation is counterclockwise – the Atlantic is warmer and more humid
    - East coast Atlantic ocean affects weather east of the Rockies
  - Rain Shadow – a region on the east side of a mountain, heavy rain falls to the west before clearing the mountain and then drier air descends and warms
  - North American Monsoon comes from Mexico
  - El Niño equatorial water (west) signals wetter weather
  - La Niña equatorial water signals dryer weather
  - Current drought began in 1994/1995 according to many professionals but all agree Arizona was definitely in a drought by 1997
  - Arizona's drought conditions continuing into a second decade
  - Urban Heat Island Effect (hardscape) affects temperatures

4. Are We Prepared for Drought? – Kathy Chavez, Water Policy Manager
  - Drought is a natural occurrence originating from a lack of precipitation over an extended period of time (National Drought Mitigation Center)
  - State of Arizona has created and implemented several programs to deal with the current decades-long drought including
    - A 1999 Drought Emergency Declaration by the Governor
    - In 2003, Governor creates the Drought Task Force
    - 2004 adoption of a Drought Preparedness Plan by the Legislature
    - 2007 requirement of Community Water Systems to adopt drought strategy plans
    - 2007 Shortage Sharing Agreement among Lower Colorado River Basin States
    - In 2012, USDA designates all Arizona counties a disaster areas due to the continuing drought
  - Arizona Department of Water Resources (ADWR) leads the State's drought efforts
    - Monitoring Technical Committee (MTC) gathers and evaluates early warnings of changes in the drought
    - Interagency Coordinating Group (ICG), made up of representatives from several State departments, coordinates awareness, conducts impact assessments, local mitigation and responses to drought impacts
    - Community Water System Plans – annual Water Use reports, Water Supply Plans, Water Conservation Plans and Drought Preparedness Plans prepared for ADWR
    - ADWR's Arizona Drought Preparedness Annual Report
  - Drought Impacts have far reaching effects on
    - Agriculture and Ranching
      - Crop damage
      - Increased groundwater pumping
      - Plantings postponed
      - Changes in crop selection
      - Lack of pasture grasses
      - Dried stockponds
      - Edible products to market sooner
      - Necessity to purchase feed
      - Necessity to haul water
    - Energy
      - Reduced power production
      - More energy usage
      - Inevitable appeal to conserve energy
      - Increased utility rates
    - Environment
      - Loss of Habitat
      - Migration
      - Extinction
      - Urban interface
      - Decreased streamflow
      - Increased conservation management
      - Supplemented water sources
      - Change in types of vegetation
      - Encroachment of invasive species
      - Insect infestation
      - Decreased streamflows
      - Loss of endangered species

- Loss of wetlands
- Society and Public Health
  - Increase in dust storms – Haboobs
  - Mosquitoes – West Nile virus
  - Flooding
  - Air Quality advisories
- Water Supply
  - Reduced reservoir storage
  - Increased groundwater use
  - Water restrictions
  - Public outreach for conservation
- Wild Fires
  - Increase in severity and extent
  - Changes in basin hydrology
  - Increased flooding
  - Restrictions and closures of forest lands
  - Evacuations
- Tourism and Recreation
  - Loss of boating, fishing, water recreation, ecotourism
  - Loss of business
- The State of Arizona and its counties have put into place measures to alleviate drought impacts, including conservation strategies, health warnings and advisories, disaster relief, preparedness plans, forest management and public awareness campaigns

5. Next LDIG Meeting – Wednesday, January 9, 2013

- Potential Topics for 2013
  - Regional Climate Model Improves Ability to Forecast Monsoon
  - Tree Ring Record of Drought in SW
  - Winter Rains
  - Snow Survey (SNOTEL)
  - State Geological Survey
  - Colorado River Basin Study
  - Subsidence
  - USGS Water Pilot Study
  - PAG Groundwater Survey
  - Future Changes in Precipitation Estimates for Western US
  - Improved Precipitation Estimates using Cloud-Ground Lightning
  - Monsoon Madness (September)
  - CO River Outlook/CAP (September)
  - Climate Change: How the Antarctic is Helping Arizona Keep its Cool
  - Drought Impacts on Agriculture
  - Cloud Seeding

6. Adjournment